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ABSTRACT

This paper addresses some of the major shifts in thinking about the nature of publishing and in basic beliefs regarding the peer review process in scholarly communication. Changes in the notion of ownership in the an age of technology are considered. Differences between the referee system with print publications and electronic text are outlined and the shift from the conception of peer review from a summary process to an emergent process is illustrated, noting the public availability of online articles that are in the process of being reviewed and are subject to revision. The "plasticity" of electronic text opens the way for interactivity as a means for quality control, an approach which views text as an organic, dynamic phenomenon capable of adapting and changing within the context from which it was conceived. The paper concludes with a description of a model of an electronic journal that encompasses both an open studio and a showcase gallery environment for textual artifacts, a model which offers the flexibility needed to implement open, interactive peer review, promising speed and diversity of opinion. (AEF)

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Print vs. Online Scholarly Publishing: Notes and reflections on the peer review process

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The idea of publishing is a concept which dates back to the Fifteenth Century. The practice was enabled by a collection of several technologies merging together to forge the age of print. Printing effectively transformed society from an oral culture to a culture of literacy (Eisenstein, 1979; Ong, 1982). Today we encounter another collection of technologies which speak of major transformation, promising changes as profound as those which sired the modern age. The postmodern extension of what it means to publish is a fascinating issue which invites new and creative ideas unconstrained by traditional assumptions. This panel, by the questions it addresses, offers a forum for testing some of the major shifts in our thinking about the nature of publishing, and about our basic beliefs regarding the peer review process.

Who owns the text?

Print publication requires an outlay of capital for production and dissemination of each published volume. The expense is usually underwritten by a publisher who requires a return on the investment. Because the investment is not trivial, ownership is attached to the work. This secures the rights to any returned value in order to protect the investment. The institution of mass media is sustained on the notion that media objects can be owned and controlled.

But that modern notion of ownership is suddenly threatened in cyberspace. Suddenly the role of publisher is trivial: I can "publish" your work by placing a mere pointer from within my own work. Or I can actually host your text on my server at a cost of pennies in disk storage. The modern publisher has little say in this postmodern arena, and there is a natural realignment of all other parties connected by the text. Ownership is now concentrated primarily between author and reader. The classification, "reader" includes all readers, whether editor, reviewer, student, librarian, web master, or any other patron who invests time and resources with the author's work.

The concept of ownership is a bit different here. Using the Lockean notion of personal property (Locke, 1690), we acknowledge the author's claim to ownership on the basis of personally invested labor. By the same Lockean token, we must acknowledge claims of ownership entailed with each act of reading: an investment in kind, if not in degree, with the author. From the standpoint of the text, the author relinquishes exclusive ownership the moment the work is made public. The value of a text is determined as much by the reader as it is by the author. Indeed, if there are no readers, what possible value could be claimed from the text? The economics of cyberspace allows this natural amalgamation of interests to exist between author and reader.

Quality control: a summary or an emergent process?

With print publications, the referee system is a summary process. Capital outlay is associated with each printing, and sound business practice requires an assurance of objective value and viability of a transcript. The author's submission is evaluated against a set of specified and unspecified criteria. The submitted draft is either fit or unfit for publication. If the work generally lives up to expectations, the author is invited to revise any weak points and resubmit the article. Otherwise submissions are either accepted or rejected for publication. The draft that is ultimately accepted becomes the article that is published. Drafts prior to publication are rarely seen by the reader. Revisions beyond that point rarely merit the expense of republication.

Not so with electronic text. There is no reason to withhold public access to an online article that is in process. The Net offers malleability where the printed page cannot. Continuous, open-ended revisions of text are feasible and even desirable in online environments. The recognition of this quality of the medium allows us to shift our conception of peer review from a summary process to an emergent process. Quality control need not be perceived primarily as an act of acceptance or rejection. The editor in an online environment can step down from the distant, anonymous, objective role as judge, and engage freely in acts of play and collaboration with the author. Quality control can be a process of mirroring, challenging, probing, validating, and encouraging an author throughout the developing cycle of peer review.

So when does an emerging text become "publishable"? When does a draft become an article? A popular Zen koan has to do with the nature and process of being: When I say that "I exist", who is this "I" that exists? When did

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"I" begin; when did "I" finally become "me"? The Zen master knows the absurdity of the question at the moment he offers it to his student. A text is an emergent phenomenon, no less than the human who conceived it. Imprisoned for centuries in the static medium of paper, text is suddenly free to develop, adapt and change without constraints. Within the domain of electronic substrate, we can consider the possibility of text as a living, organic structure, not a mere artifact. Like all other living phenomena, text can be understood for its emergent qualities, the ability to adapt and grow within the contexts from which it was conceived. Online text need not replicate printed text in order to become a legitimate medium for scholarship. Within electronic environments, a text can emerge modestly, then live on within the changing world that conceived it.

A case for plastic texts

This organic conception of text challenges our mythology about the sanctity of the written Word. Cultural tradition runs deep, imposing strong and tacit influences upon our present consciousness. A draft of an article commands very little homage compared to a fixed, permanent image of the text, even after the published article has become outdated by subsequent revelations. To illustrate this point, let me cite an example from my own workplace.

StorageTek manufactures computer peripherals for large data processing environments. As part of the global trend toward online documentation, StorageTek's manuals are going through the transition from hard copy to electronic form. Currently StorageTek provides both printed and electronic versions, the latter available to customers from the StorageTek web site. A recent engineering change in one of our products obsoleted some information contained in the information bulletin for another product. I called the matter to the attention of our technical writers, suggesting a minor revision to the online document.

"Revise a released document?!" The writing group was totally unprepared for the suggestion. They cited any number of reasons, including ISO 9000 incantations, why it was a bad idea. The fact that users would benefit from the new information did not enter into their analysis. They were more concerned over the lack of fidelity to the printed Word. Knowing that the issue would be revisited many times, a compromise was offered. The "official" online text would never change. However, the writers would add a hyperlink from the official version to an updated copy. This "unofficial" draft can be corrected and updated dynamically as engineering changes and other conditions require. From the user's standpoint, it is the draft version that holds promise for the most reliable information. Ironically, this version "under construction" holds subordinate status to the inaccurate, out-of-date, "official" version.

The need for plasticity becomes more pronounced as knowledge becomes increasingly dynamic within a changing society. By placing text online, we can see the futility of preserving structure and content so carefully molded into a text by its author and so carefully scrutinized by an editorial body. Hypertexts are especially volatile because of their direct connections to external, uncontrolled sources. Texts which lend themselves to are perhaps the best suited inhabitants of the virtual library. When a monolith is fragmented into multiple "lexias" (Barthes/Landow) it allows external references to connect directly to contexts within the text. It also allows for dynamic, incremental text revisions which can be evaluated quickly within a responsive process of peer review. Any critical function related to the text (including the referee system) must acknowledge the organic, temporal, incremental, and deconstructive attributes of online text, the salient affordances which distinguish this medium from printed text.

Studio/Gallery Model

My intent in these musings is to kick off a discussion which allows us to come to grips with the task of "inventing" a viable, credible model for an online refereed journal. The challenge we embrace involves the "invention" of a referee model that makes use of the affordances inherited with a new medium while maintaining the credibility and intellectual rigor associated with traditional peer review.

The plasticity of electronic text opens the way for interactivity as a means for quality control. This approach views text as an organic, dynamic phenomenon capable of adapting and changing within the context from which it was conceived.

I have not yet considered the traditional conception of text-as-artifact, a legitimate paradigm that fits well within the medium of print. Being careful not to impose the print paradigm onto this new medium, it may reasonable for us to accept the fact that static representations can reside legitimately along side dynamic texts within electronic domains. Unlike print media, the World Wide Web can accommodate both very well.

An essay is an artifact - a work of art - no less than a painting, or sculpture. Finished works of art are intended for public display, and it is a gallery that provides that function of public exposure for fine art. Like a gallery, a journal provides this function for textual artifacts. If the artist's work meets thematic, technical, and

quality criteria then the work might be placed on display (though it is rare that a gallery fully discloses the actual criteria for inclusion). The focus in a gallery is on the artist's work and its overall impact to visiting patrons.

In the artist's studio, the focus is on the *process*. Here the artist might display the emerging work to solicit comment and share ideas with interested students, peers and patrons. The process involves testing, validating and improving ideas or techniques that go into the work. Many works that can be found in a studio will never be seen in a gallery. Ideas which show promise might surface in later works, or new ideas might emerge out of specific reactions to earlier attempts. Works which never find their way to a gallery can still influence the state of the art.

The focus in a gallery is the *product*. The work is on display to move, to provoke or to inspire the patrons who come to view it. The work is subject to criticism, not for purposes of improvement but to solicit reaction for its own sake. A gallery will strive for collections that provoke reaction in order to maintain a high level of public interest.

It is conceivable that an electronic journal can provide both environments: an *open studio* and a *showcase gallery* for textual artifacts. In the studio, peer interaction allows for quality improvement, validation of ideas and techniques, and the generation of new ideas. The gallery is a showplace for 'finished' works. Gallery selections are likely made on the potential of a work to provoke public reaction and to maintain a high level of interest. It should not be necessary to limit displayed works to those that were developed in the 'open studio', and there is no guarantee that works developed there will find their way to the gallery. But artists who choose to work in the open studio will have the benefit of peer commentary and feedback.

Public reaction to displayed artifacts might find its way back to the open studio. This environment would allow for continued dialog in the form of peer commentary and criticism, advancing general perceptions of new and provocative ideas which were put on display.

I believe this studio/gallery model might offer us the flexibility we need to implement open, interactive peer review, giving us the speed and diversity of opinion which it promises. At the same time we can reserve a degree of logocentric control over the actual publication to satisfy more traditional demands for academic quality and credibility.

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